

Procrastination:
A Luxury of the Rich?
A Necessity for the Poor?

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July 25, 2006

Basic patterns about procrastination:

- Many Californians (some 20%) are late with biennial smog checks.
- Those whose vehicles fail are slightly more likely to be late for their initial test.
- Some 40% of failed vehicles are not passed by the re-registration due date, most of these more than 30 days late.

Yet more questions about procrastination over smog checks:

1. Are the same Californians procrastinating on other biennial smog checks, whether for their same or their other vehicles?
2. Which Californians are late with the re-registration fee itself?
3. Does a vehicle failing in one biennial cycle encourage or discourage its owner from procrastinating during the next cycle?
4. How does the EMFAC emission model account for the pollution resulting from procrastination?
5. Is procrastination a significant source of pollution?

From “Who Owns Older Vehicles?”

Several “rich” zips:

90210 90265 90266 90272 90274 90275 90290

Several “poor” zips:

90001 90002 90003 90004 90005 90006 90007

Example of a vehicle's test dates from a household in a “rich” zip (90265)

VIN WBSBF9320SEH05598

CA plate 4ECH375, '95 BMW 3-series

Registration due August 22, 2004

Station Result	Date and time	Mileage	Type
• TF211529,	9/11/2004,12:46,	123792,	P, F
• TF211529,	9/13/2004,13:27,	123975,	P, F
• TL202377,	9/22/2004,14:45,	124265,	P, P

Pass certificate first attempted 20 days late

Pass certificate achieved 31 days late

More tests from that 90265 household

VIN WBSBF9320SEH05598

Registration due August 22

Station	Date and time	Mileage	Type
Result			

- TF211529, 8/22/2002,12:51, 99995, P, P

Pass certificate achieved on date due

VIN WDBHA33G1WF701404

CA plate 4LKW993, '98 Mercedes C43

Registration due April 8

- RD101532, 4/06/2002,08:12, 56289, B, P

Pass certificate achieved 2 days early

- RL224772, 4/07/2004,10:54, 72901, B, P

Pass certificate achieved 1 day early

Also owns '00 BMW, '01 BMW, '01 Mercedes

Example of a vehicle's test dates from a household in a “poor” zip (90006)

VIN 1HGBA5439GA000916

CA plate 4EGA112, '86 Honda Accord

Registration due April 16, 2004

Station Result	Date and time	Mileage	Type
• TF200398,	4/14/2004,16:47,	132385,	P, F
• RH223311,	4/20/2004,16:50,	132631,	Q, F
• RH223311,	4/20/2004,17:28,	132631,	Q, P
• TA157890,	4/20/2004,17:57,	132632,	P, P

Pass certificate first attempted 2 days early

Pass certificate achieved 4 days late

More tests from that 90006 household

VIN 1HGBA5439GA000916

Registration due April 14

Station	Date and time	Mileage	Type	Result
• RB158497,	4/13/2002,11:33,	121633,	B,	P
Pass certificate first attempted and achieved			1 day early	

VIN 1GTCS14B7D8500236

CA plate 4Z09328, '83 GMC S15 Pick-up

Registration due March 31

• RB158457,	2/25/2002,16:47,	160196,	Q,	A
• TG200628,	5/15/2002,16:45,	161325,	S,	P
Pass certificate first attempted and achieved			45 days late	
• TC220795,	3/31/2004,10:29,	177141,	P,	F
• TC220795,	4/08/2004,14:52,	177336,	P,	P
Pass certificate first attempted			on due date	
Pass certificate achieved			8 days late	

Sample from the households in rich and poor zips

- If household defined as having more than 6 vehicles, that household ignored
- Re-registrations due January 2004 - December 2005
- Model years 1976-1999
- A pass must be observed within 90 days before and 150 days after re-registration due date (ASM test)
- Full history in previous cycle also required
- If code C for change-of-ownership, vehicle not considered
- 75,563 vehicles considered here of the 181,039 from those model years
- Comparable to 1/100th sample statewide

Characteristics of vehicles in these groups of zips

	“Poor” zips	“Rich” zips
Vehicles ('76-'99)	40,114	35,449
Households	34,270	29,042
Median model year	'92	'95
Median mileage	124,500	87,100
Commercial	15.1%	8.0%
Vanity plates	1.3%	7.8%

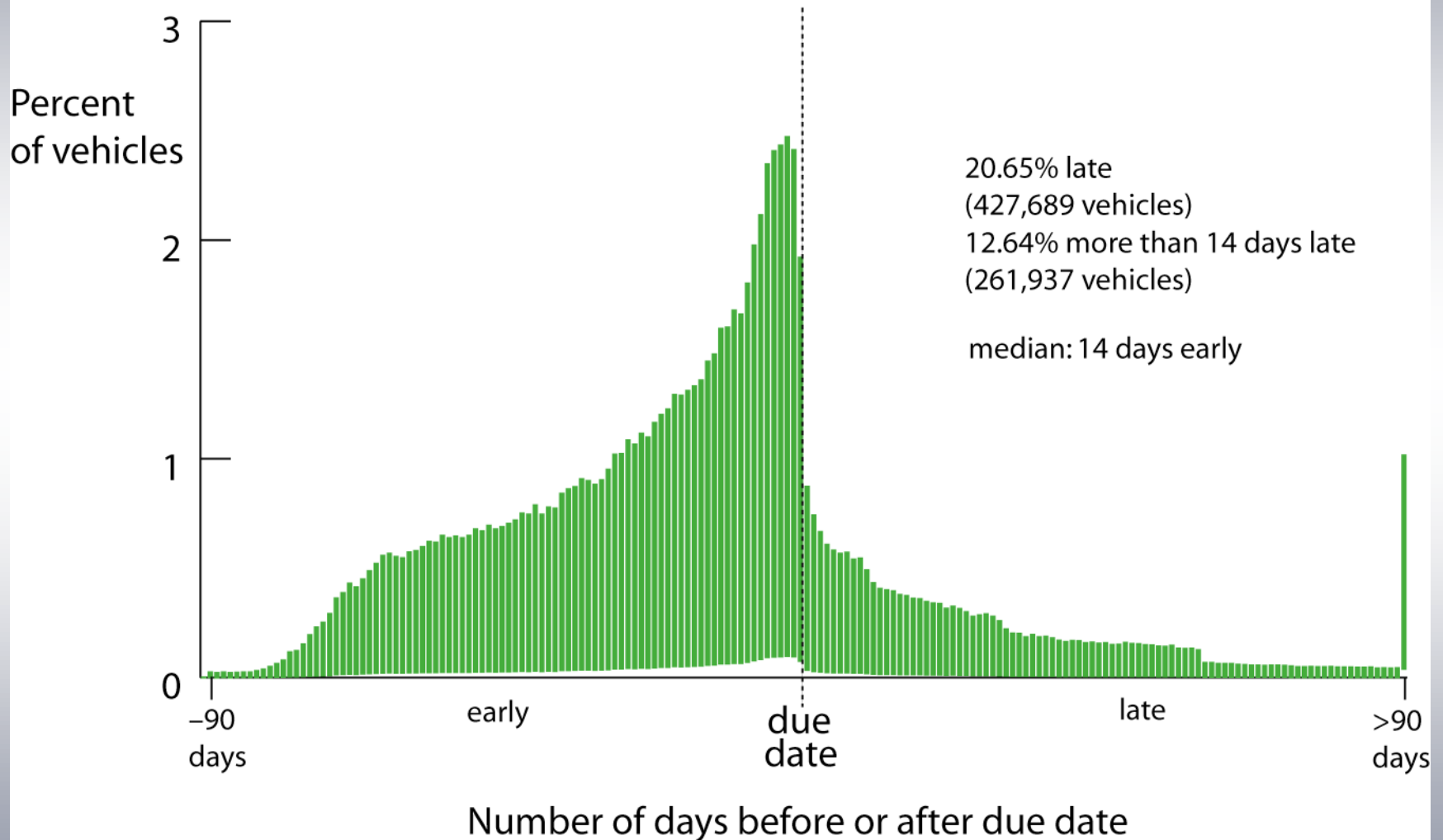
Test results of vehicles in these groups of zips

	“Poor” zips	“Rich” zips
Fail at first attempt	19.9%	9.1%
If fail,		
Gross Polluter	26.2%	14.8%
Tampered	8.0%	3.6%

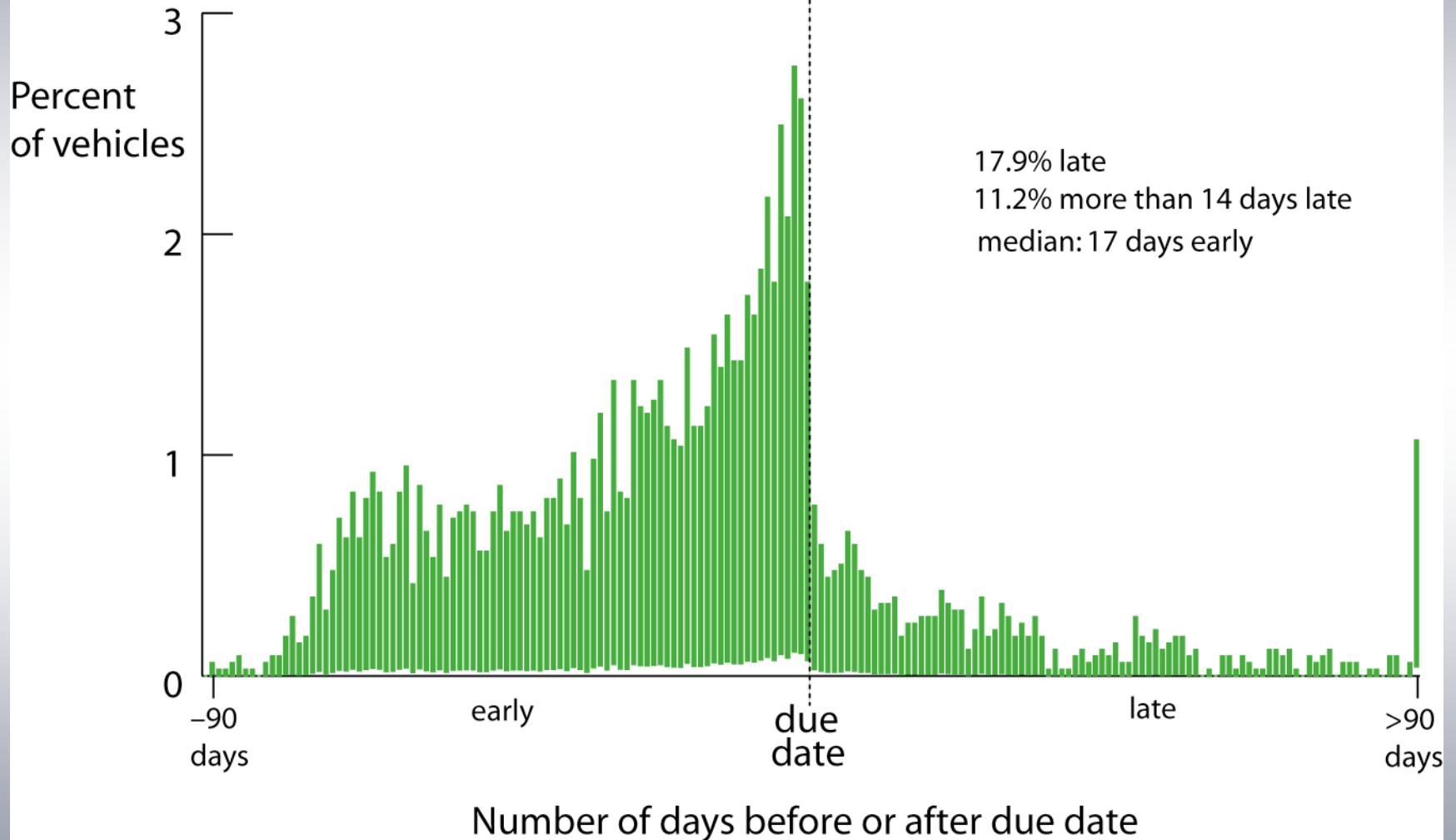
Procrastination in these groups of zips

	“Poor” zips	“Rich” zips
Late with first attempt	23.9%	14.2%
Given late, probability of fail	20.2%	11.5%
Fails certified late	35.2%	33.8%
Gross polluters certified late	39.0%	40.5%
Fails certified > 14 days late	24.6%	23.5%
If fail certified late, median days late	28	26
If first attempt failed, certificate > 60 days later	9.1%	8.1%

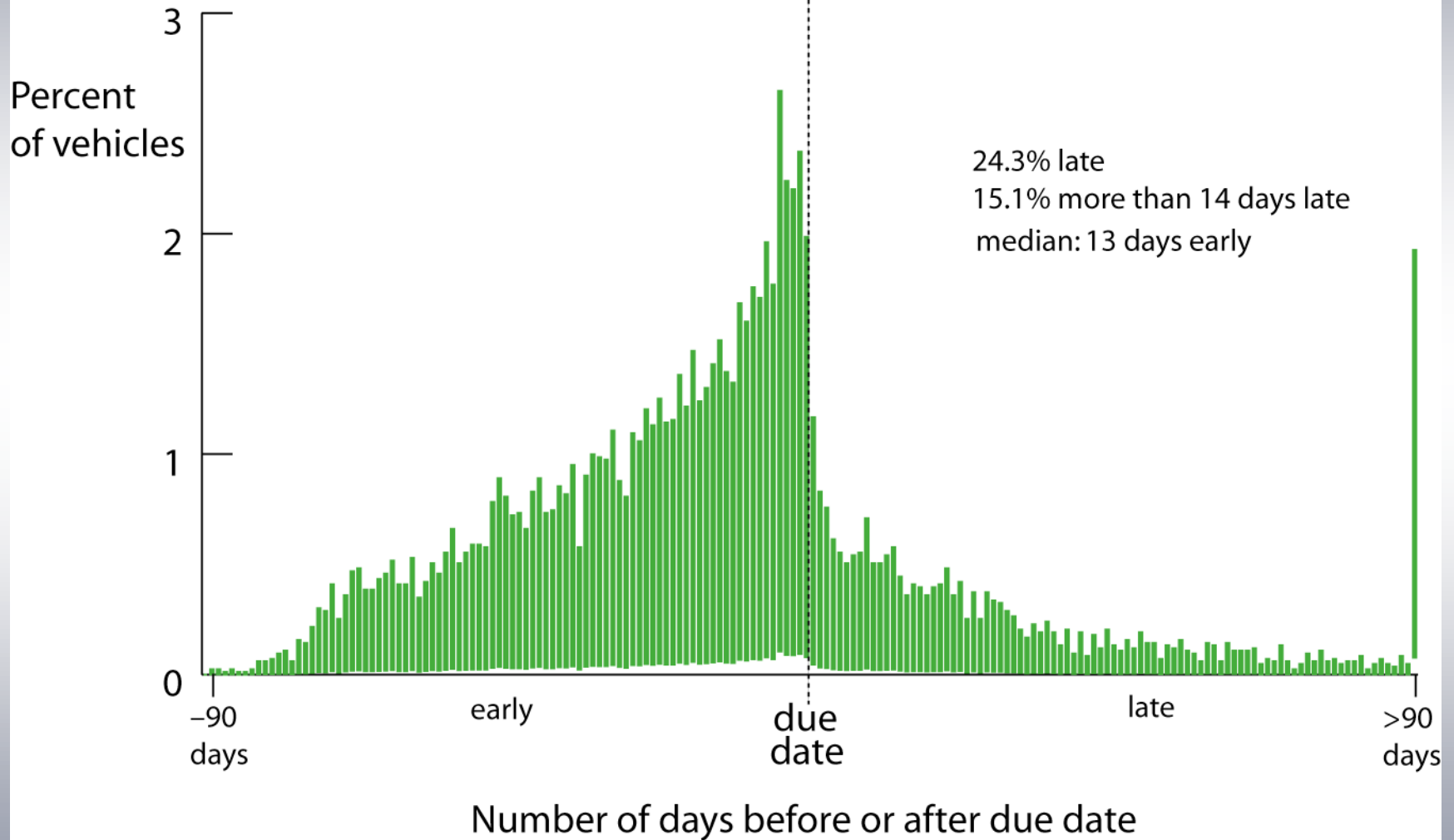
Time of first test relative to registration due date if result was a pass (2,071,635 vehicles)



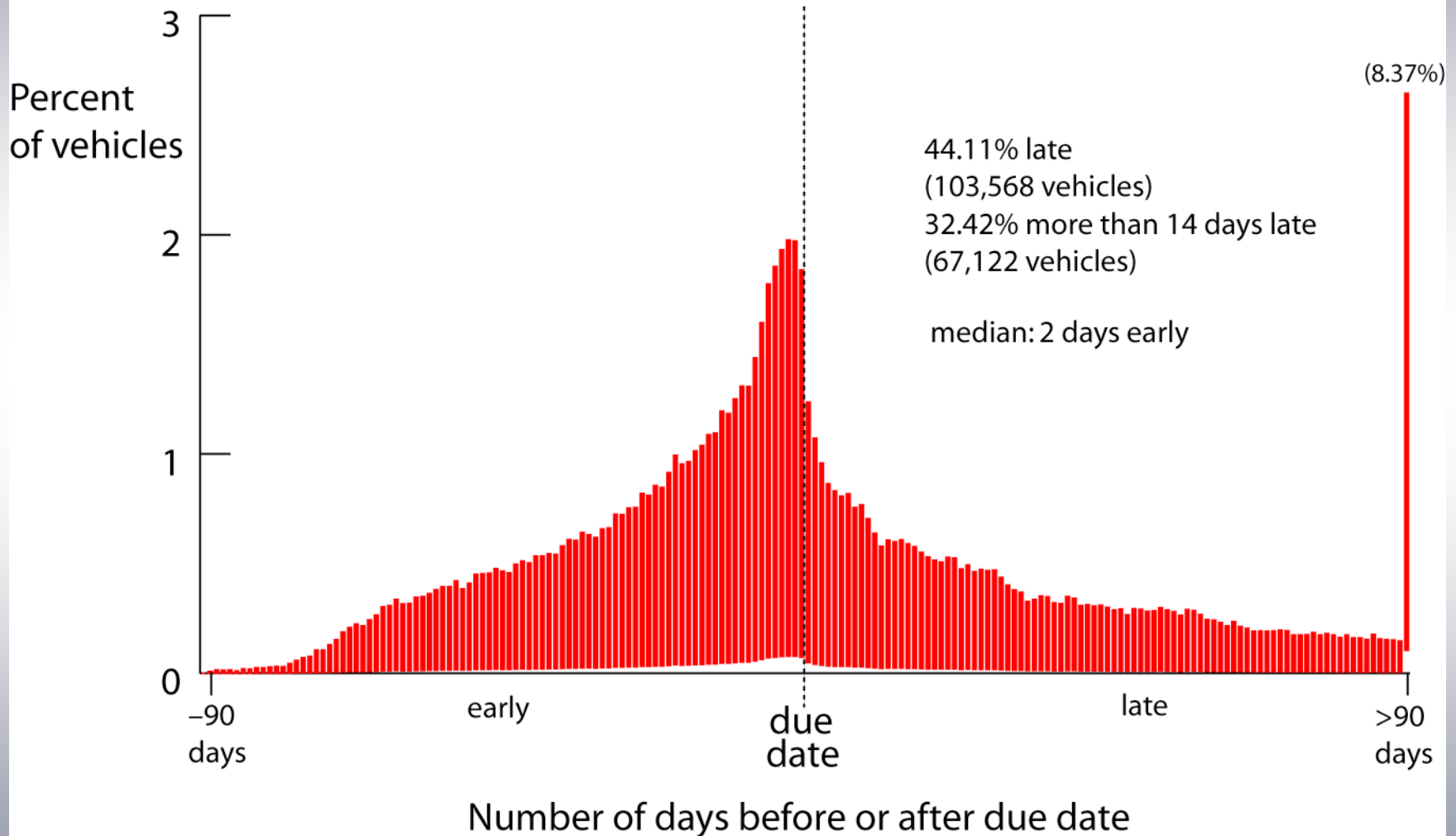
In “rich” zips, time of first test
if result was a pass (32,257 vehicles)



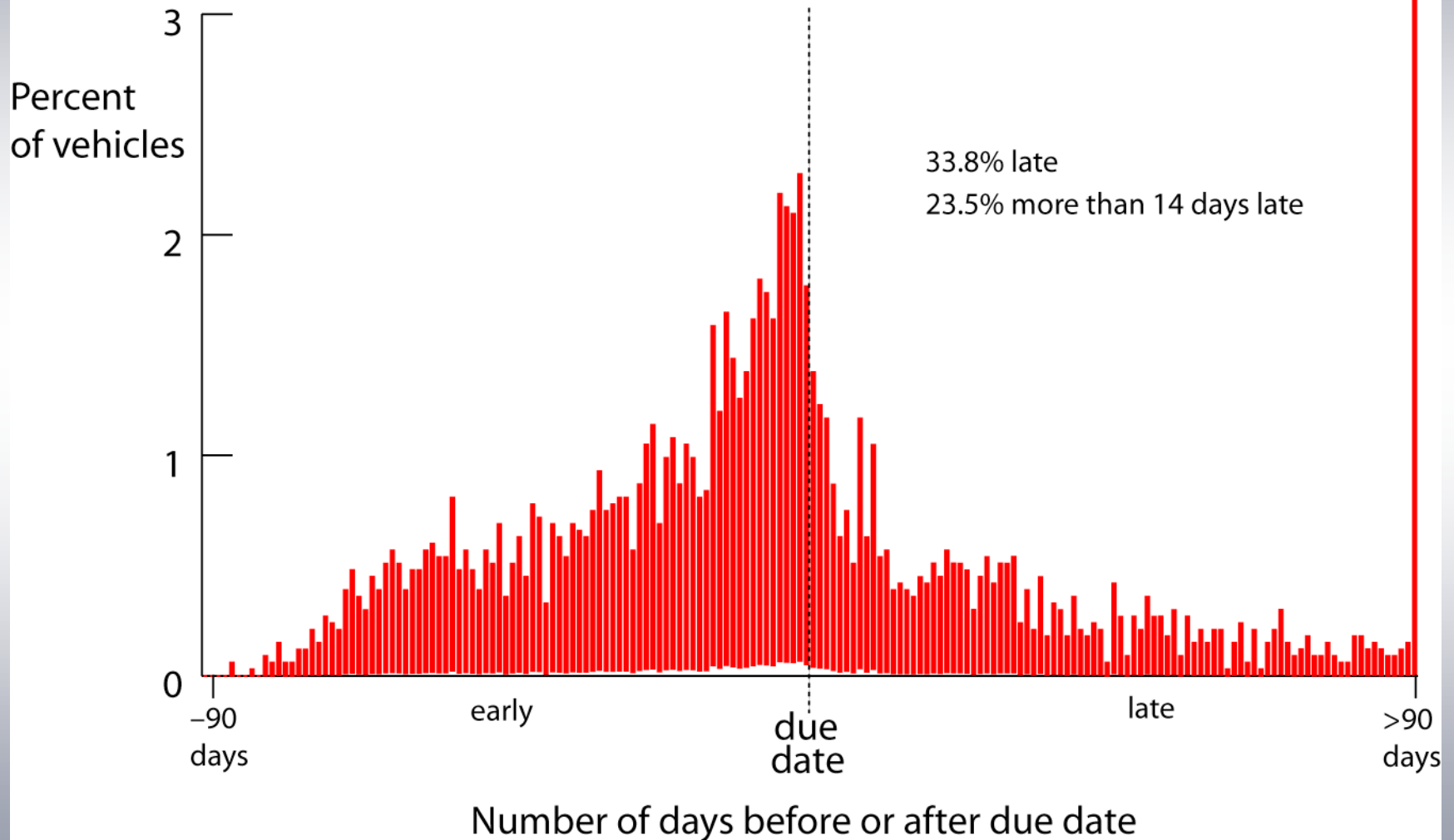
In “poor” zips, time of first test
if result was a pass (32,124 vehicles)



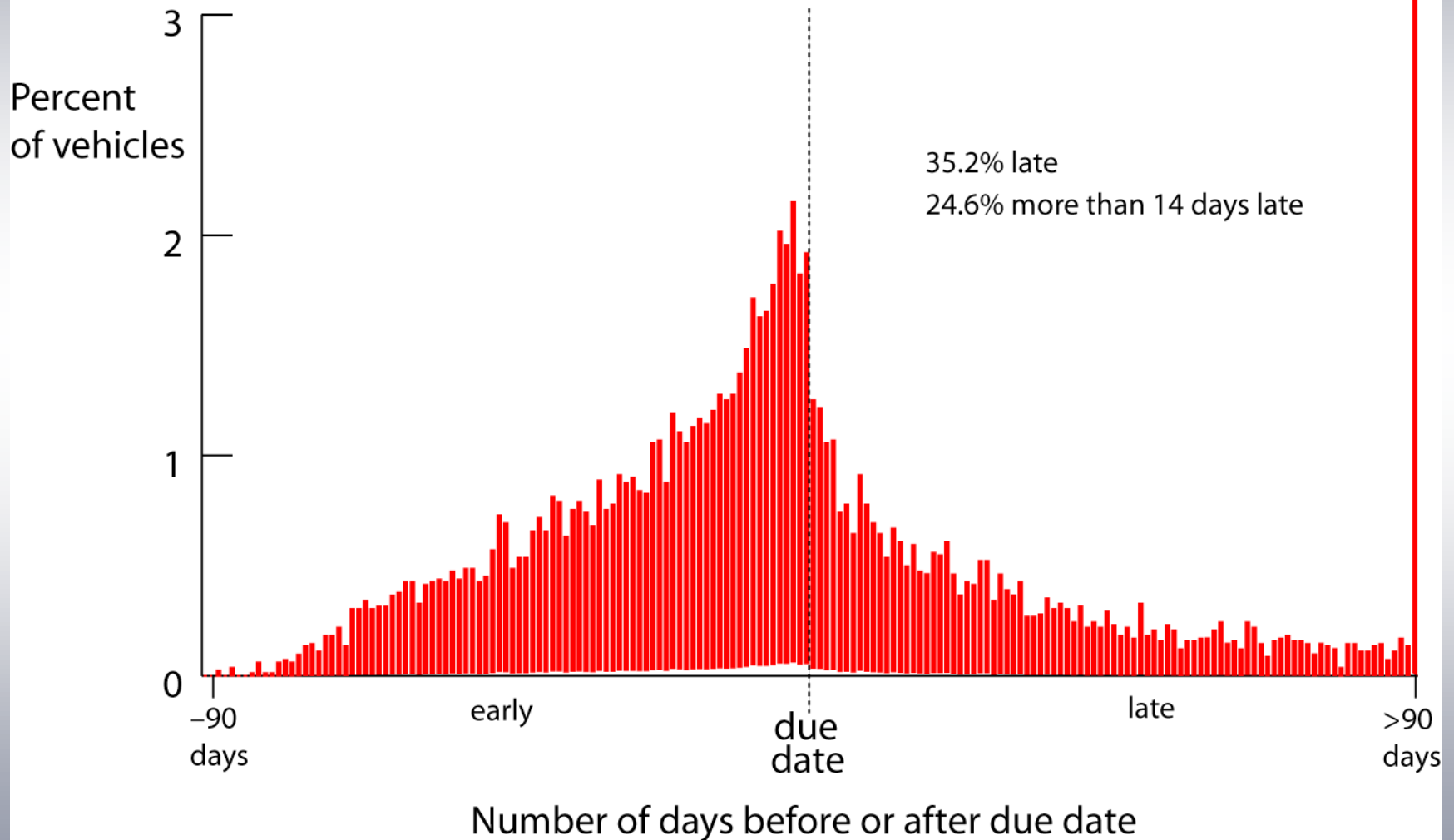
Time of ultimate pass relative to registration due date if result of first test was a fail (234,806 vehicles)



In “rich” zips, time of ultimate pass if first attempt was a fail (3,242 vehicles)

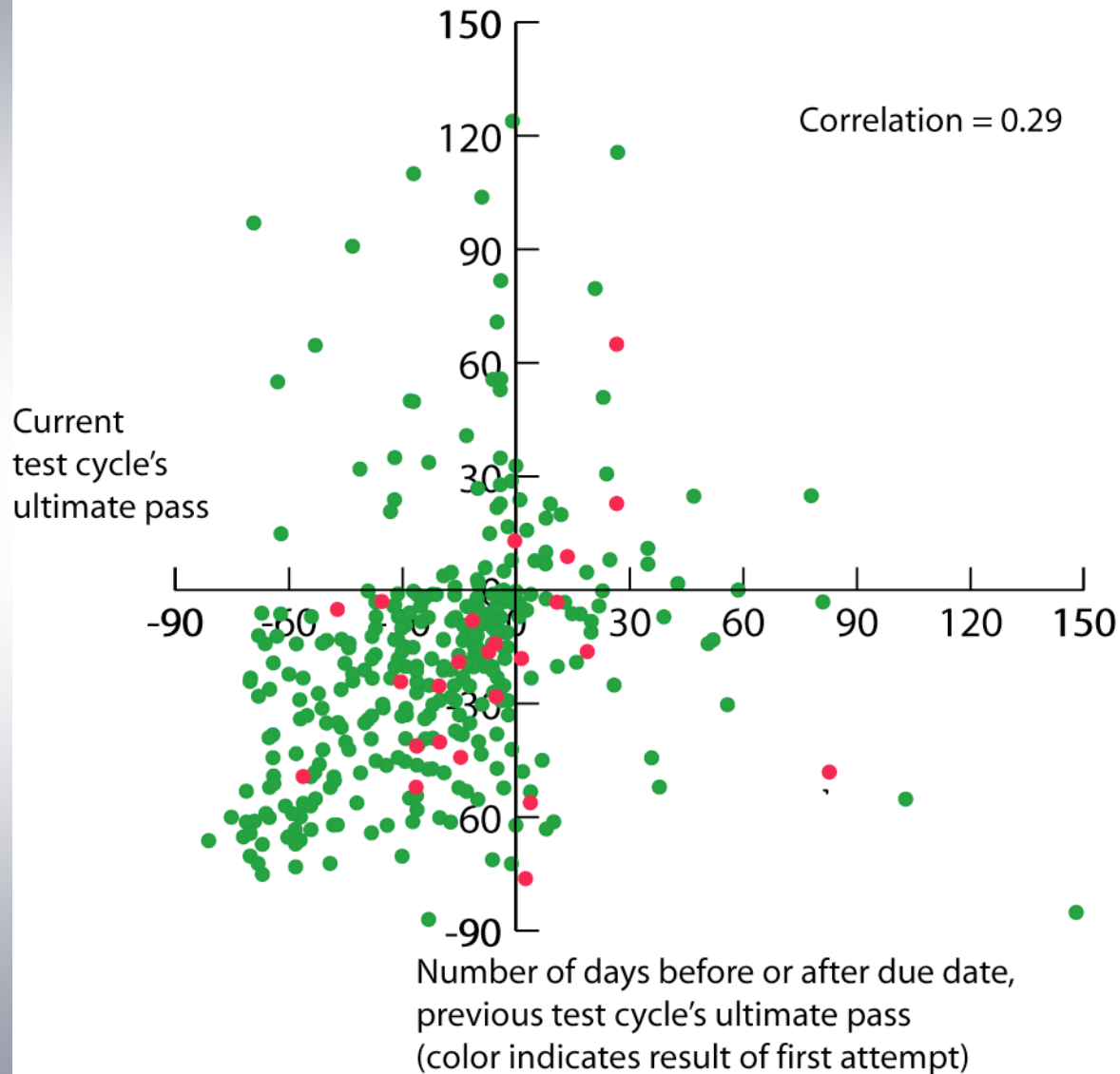


In "poor" zips, time of ultimate pass
if first attempt was a fail (7,990 vehicles)



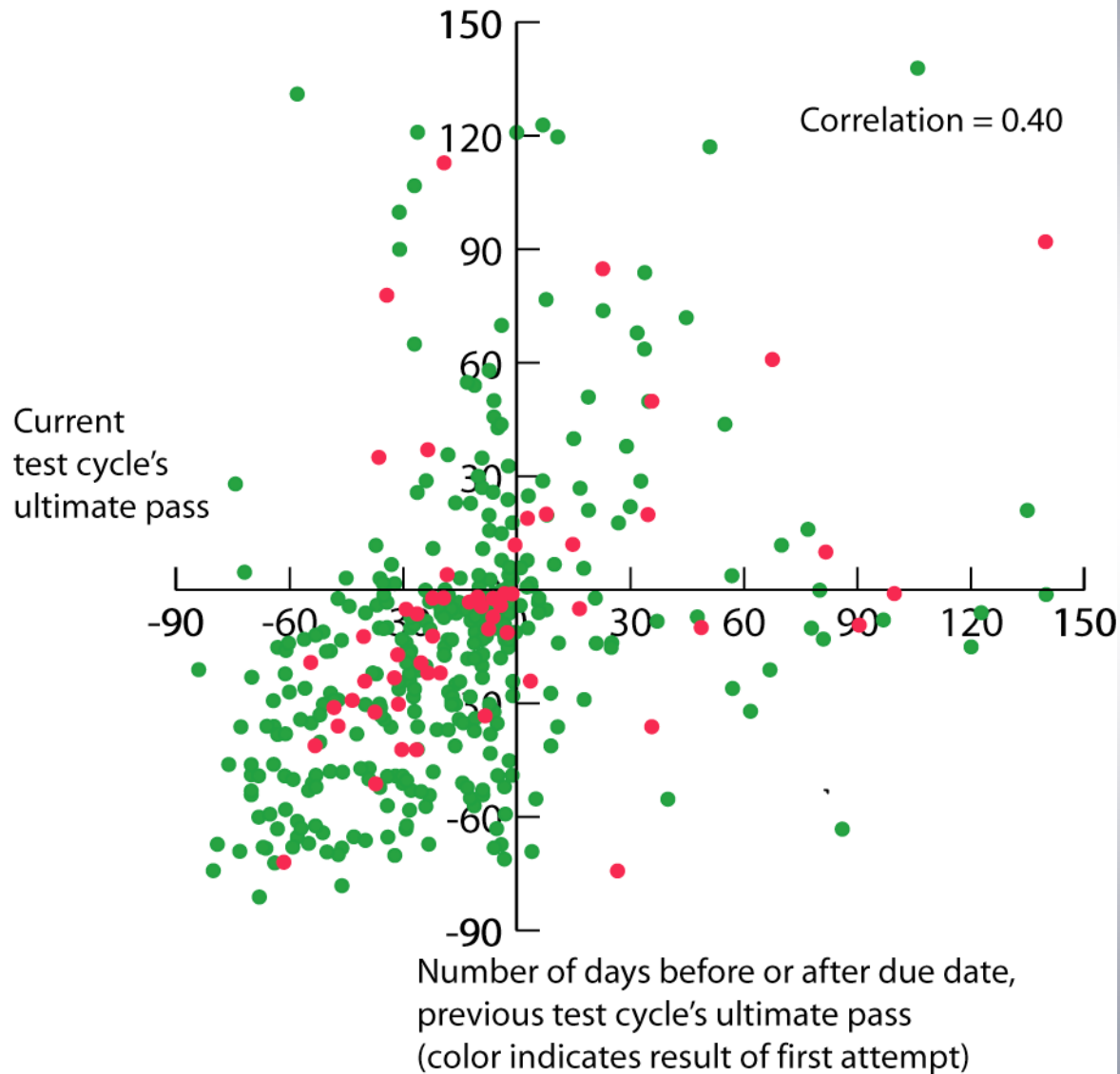
Persistence in procrastination in “rich” zips

(1 in 100 illustrated)



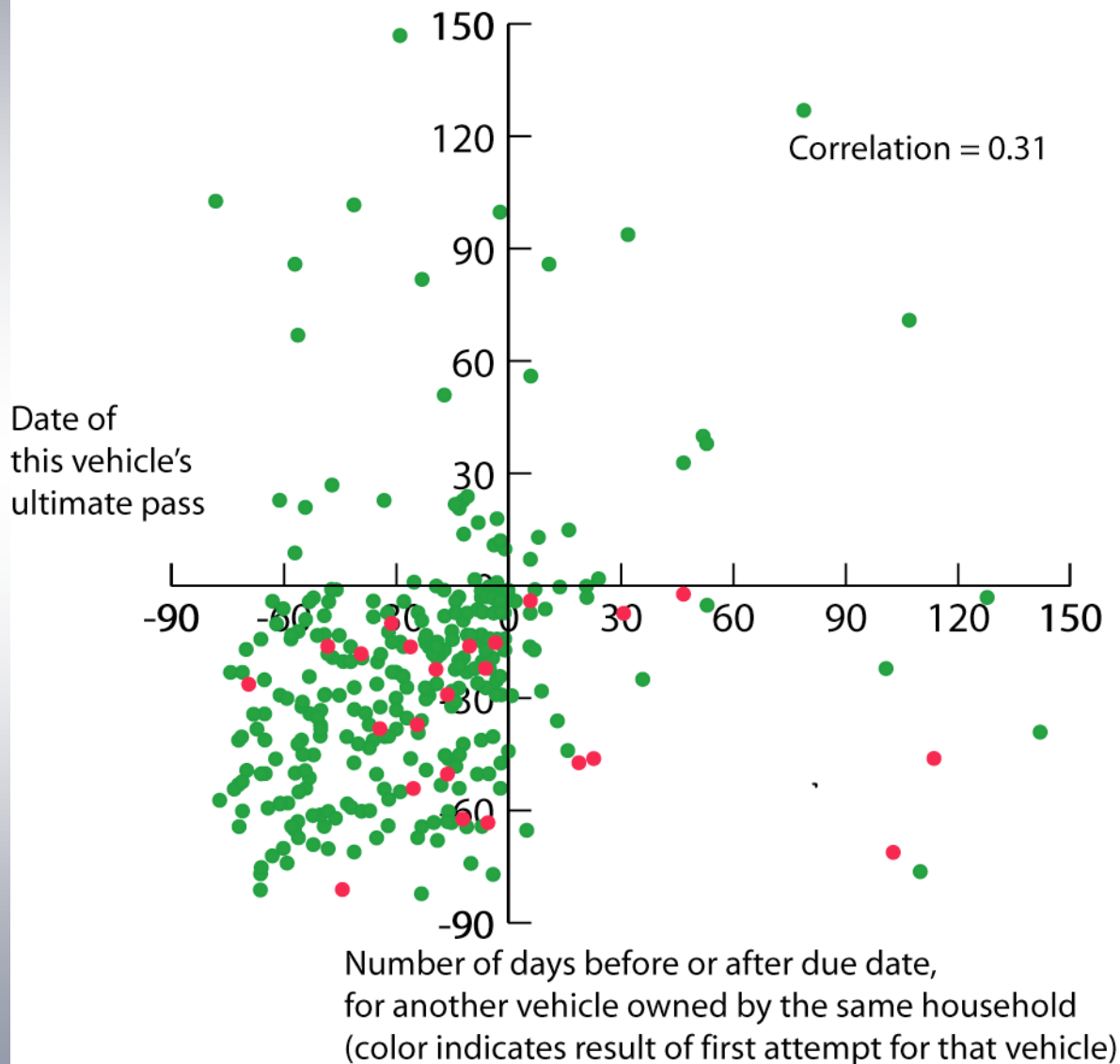
Persistence in procrastination in “poor” zips

(1 in 100 illustrated)



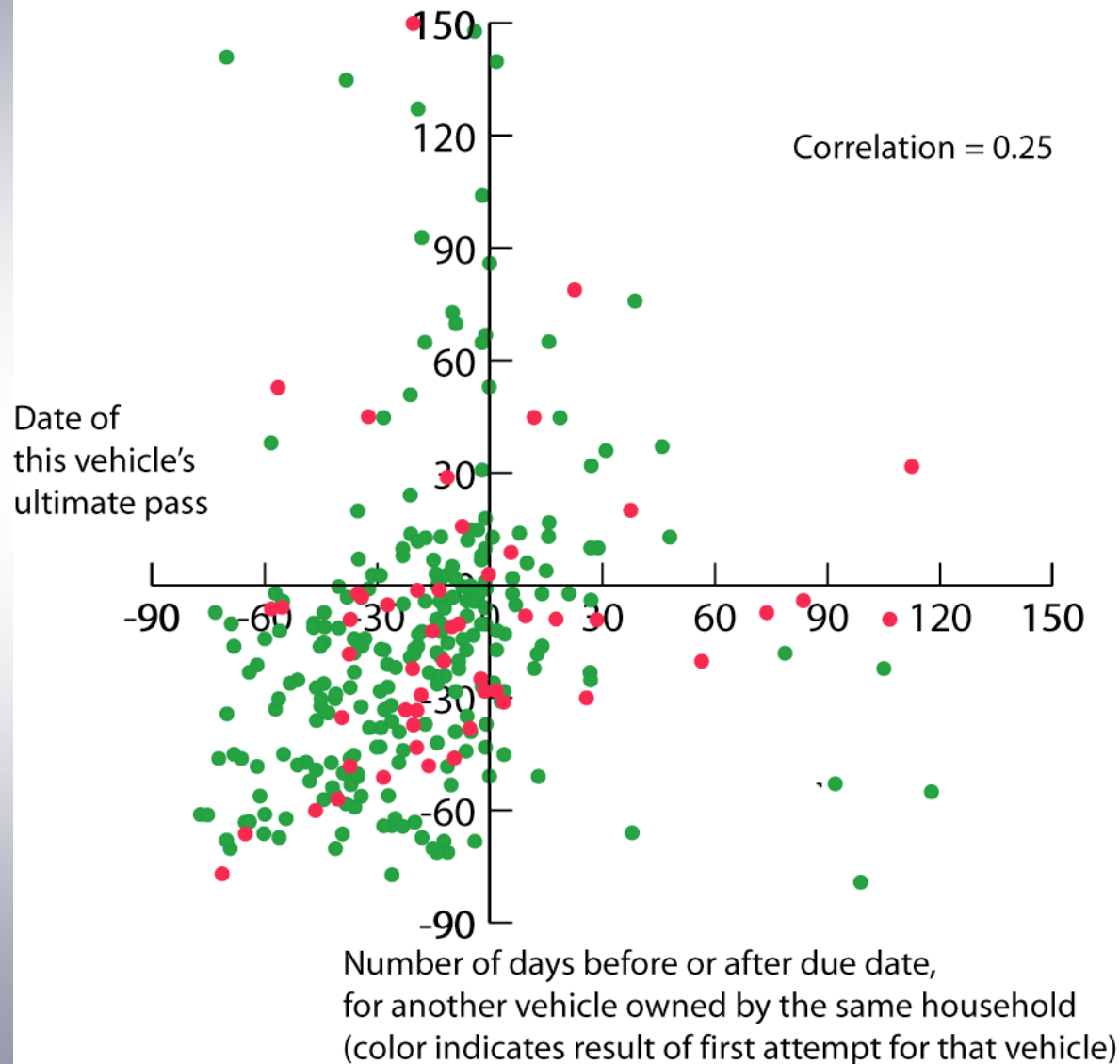
Spillover of procrastination in “rich” zips

(1 in 20 illustrated)



Spillover of procrastination in “poor” zips

(1 in 20 illustrated)



Mileage of fails late to achieve certificate

	Median monthly mileage		
	Statewide	“Poor”	“Rich”
All such vehicles	574	778	781
Gross polluter	422	817	804
Tampered	497	660	769
‘97 – ‘99 vehicles	936	1065	1002
‘76 – ‘87 vehicles	305	771	781
> 30 days late	543	714	683
> 60 days late	528	776	732

Quantification of pollution due to procrastination

- Using test readings at first attempt and ultimate pass and the EMFAC model, each vehicle's grams/mile estimated
- Miles per day estimated from odometer reading from previous cycle
- Number of days late for those vehicles late to obtain ultimate pass

	"Poor"	"Rich"
HC (tons)	3.2	0.8
NOx (tons)	5.8	1.7
CO (tons)	43.8	12.4
(per two-year cycle)		

Comparison with other policies

- Elimination of 30-year rolling exemption:
5.7 tons/day (HC+NO_x) at \$7,300/ton
- Annual inspection of older vehicles:
27.4 tons/day (HC+NO_x) at \$8,500/ton
- No procrastination allowed:
11.5 tons/(2x365) x (statewide/LA sample)
about 1-2 tons/day at \$?/ton/day

Plausible costs to consumers

Cost of policy of annual inspection of older vehicles:

- Inspection of all vehicles \$60
- Repairs to failing vehicles
\$200 each for 25% of vehicles \$50
- Consumer's time \$15
- Total per vehicle \$125

Cost of reduced procrastination:

- Inflexibility in selecting date \$5

Conclusions

- Late repairs are a not-insignificant source of pollution.
- The cost/benefit ratio to a policy reducing procrastination appears comparable to other policies recommended.
- Lateness in smog checks is not closely related to income.
- If anything, lateness in smog checks reflects the particulars of the vehicle's owner: Some people are chronic procrastinators.